MYRMECIA

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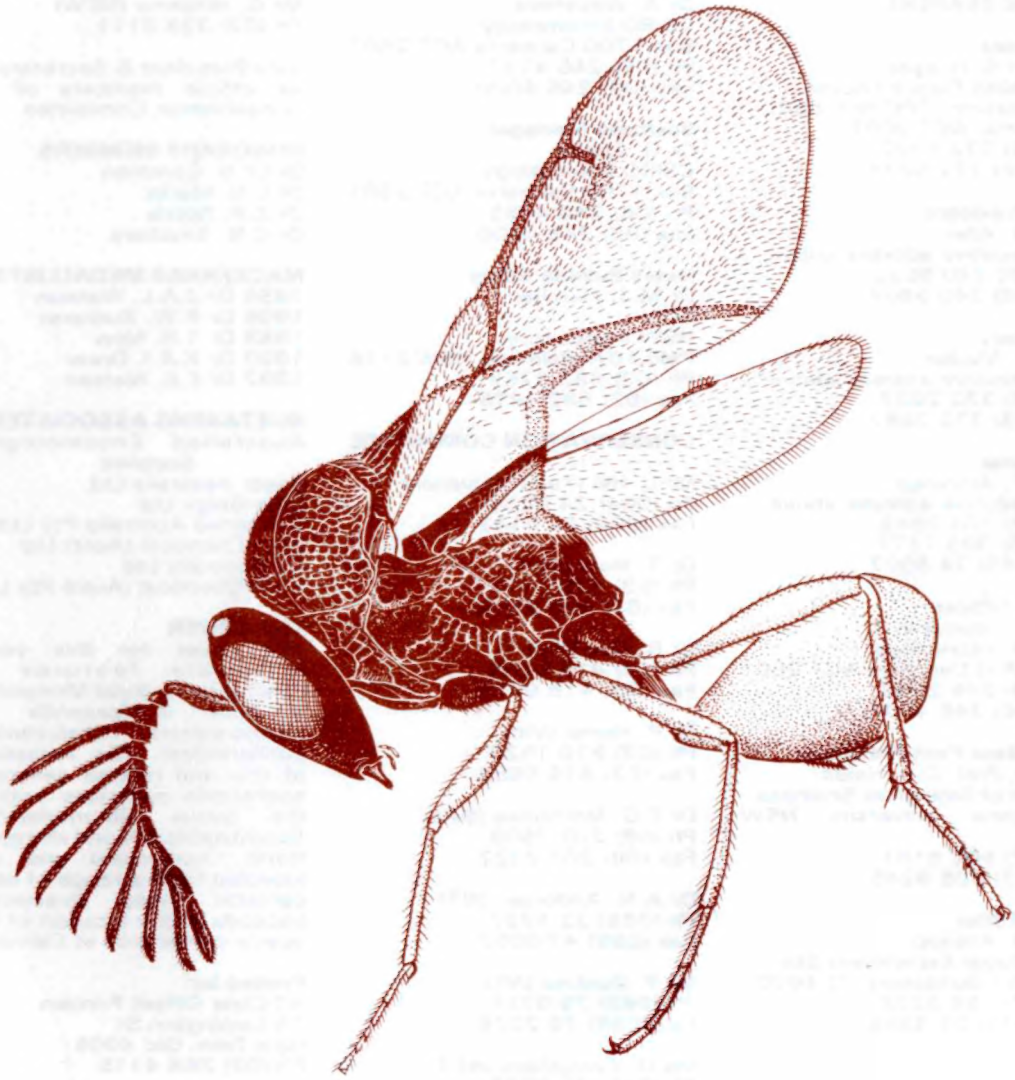

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1988 Dr T.R. New
1990 Dr R.A.I. Drew
1992 Dr E.S. Nielsen

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THE COVER
The cover for this year's *Myrmecia* features an illustration by Sybil Monteith of a male *Schizaspidia* sp. (Hymenoptera: Chalcidoidea: Eucharitidae). The immatures of this and related genera of eucharitids parasitize ants of the genus *Odontomachus*. *Schizaspidia* is found in tropical North Queensland and was selected from a range of other parasitic wasp illustrations because of the location of this year's conference in Cairns.

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MYRMECIA

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Advertising Rates for Myrmecia

	Single Issue	4 Issues (One year)
Full Page	$60	$180
Half Page	$35	$105
Quarter Page	$24	$72

These rates apply to camera-ready copy supplied by the advertiser. Where this is not supplied, an additional charge may be made for the layout.

In addition, loose inserts and pamphlets supplied by the advertiser will be included in a mailout for $100 per item. The items should be of a size which will not project beyond the pages of *Myrmecia*.

NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

Copy Deadline for Next Issue

Material for publication in the August 1993 issue of *Myrmecia* should be in the hands of the Editor at the address below by **Friday 30 July 1993**. Submission on IBM-compatible floppy disk in a major word processing format is preferred. Details are available from the Editor.

Murray FLETCHER
News Bulletin Editor
Biological and Chemical Research Institute
PMB 10, Rydalmere, NSW 2116

EXECUTIVE REPORT

Meetings

The core Executive met on 5 February, 11 March and 16 April 1993.

New Members

We welcome the following new members to 1993 membership:

Elected 5 February 1993

Mr. D. BURROWS, B.Sc., 43 Egret Crescent, Condo QLD 4815. Damien has interests in ecology, mangrove insects and biological control.

Mr R. CANT (Grad.Dip.Hort.), 312 Lt. Bowen Drive, Bowen Mountain NSW 2753. Russell is a Ph.D. Student at the University of Western Sydney - Hawkesbury, and has an interest in the biology and ecology of the Heteroptera.

Mr B.A. MELBOURNE, 33 Curlewis Cr., Garran ACT 2605. Brett is currently completing his B.Sc.(Hons) course.

Elected 11 March 1993

Ms D. CHIN, Assoc.Dip.Appl.Sci., c/o Entomology Section, Dept of Primary Industry & Fisheries, PO Box 990, Darwin NT 0801. Deanna is a Technical Officer with interests in insect pests of tropical horticultural crops.

Miss A. CONDELLO, B.A., B.Sc., Entomology

Branch, BCRI, PMB 10, Rydalmere NSW 2116. Angiolina is a Technical Officer with interests in the taxonomy of Cicadellidae and in biodiversity.

Ms K. DAVIES, B.Sc., 17 Barron St, Deakin ACT 2600. Kendi is an Honours Student with interests in conservation and biodiversity.

Mr J.R. ESPERSON, 4 Trevatt Ave, Lower Templestowe VIC 3107. James is a retired geological engineer with an interest in the Formicidae.

Mr S.A. FIELD, B.Sc.(Hons), 33 Windsor Ave, Hahndorf SA 5245. Scott is an M.Agr.Sc. Student as well as a Research Officer with the Dept of Crop Protection, Waite Institute. He has an interest in parasitoid behaviour.

Mr G.J. FLOATER, B.A.(Hons), Dept of Entomology, University of Queensland, St Lucia QLD 4072. Graham, a student in the Department, has been a Museum Assistant at Oxford and Harvard and has an interest in the insects of the Seychelles.

Mr A.H. NICHOLAS, B.Sc., c/o Bathurst Agr. Res. Station, PO Box 1386, Bathurst NSW 2795. Adrian is a Research Assistant (IPM in apple orchards) as well as an M.Sc. Student at the University of Western Sydney (Hawkesbury).

Mr C.R. TANN, Cert.Appl.Sci., 2 Goobar St, Narrabri, NSW 2390. Colin is a Science Technical Officer with CSIRO Entomology and is working on the *Heliothis* problem in cotton.

Mr R. VAN KLINKEN, B.Sc.(Hons), Dept of Entomology, University of Queensland, St Lucia QLD 4072. Rieks is a full-time Ph.D. student.

Mr E.C. WILSON, PO Box 132, Albert Park VIC 3206. Edison is an amateur entomologist.

Elected 15 April 1993

Miss N. AGELOPOULUS, M.Sc., Dept of Crop Protection, Waite Campus, University of Adelaide, PO Glen Osmond, SA 5064. Nicky is a Ph.D. student in the above Department.

Ms V. BRANCATINI, B.Sc.(Hons), CSIRO Entomology, Long Pocket Lab., Private Bag No.3, Indooroopilly, Qld 4068. Veronica is a Scientific Officer with interests in biological control and plant/insect interactions.

Dr K. DHILEEPAN, Ph.D., Victorian Institute of Animal Science, 474-485 Mickleham Rd, Attwood, Vic. 3049. Dr Dhileepan's research interests include monitoring mosquito vector populations and the transovarial transmission of arboviruses.

Mr S. HOOD, B.Sc.(Hons), Wildman River Cashew Plantation, Winnellie, NT 0821. Mr Hood is a Ph.D. student.

Mr A.J. HUNT, B.Sc.(Hons), 540 Northbourne Ave, Downer ACT 2602. Alastair is a student with a general interest in entomology and a particular interest in insect ecology.

Ms R. HUWER, 15 Swan St, Mareeba Qld 4880. Ruth is a Ph.D. student with a project on the biology of the banana-spotting bug.

Ms M. JOHNSON, c/- Dept of Zoology, James Cook University, Townsville, Qld 4811. Marie-Louise is with CSIRO Entomology, Townsville, and has interests in biological control and IPM.

Mr A.K.L. NEWMAN, 101 Upper Sturt Rd, Upper Sturt, SA 5156. Alex is enrolled as a B.Agr.Sc.(Hons) student at the Dept of Crop Protection, University of Adelaide, and is involved in studies of parasitoid behaviour.

Ms K.C. PATTERSON, B.Sc.(Hons), CRC for Temperate Hardwood Forestry, Locked Bag No.2, PO Sandy Bay, Tas. 7005. Ms Patterson is a Ph.D. student with interests in plant/insect interactions.

Mr M. PICKETT, PO Box 183, Lobethal, SA 5241. Marcus has an interest in the Lepidoptera and in the general area of invertebrate conservation.

Mr D.R. SPARKS, B.Sc.(Hons), Alan Fletcher Research Station, PO Box 36, Sherwood Qld 4075. David is an Assistant Scientist doing a part-time M.Sc. and has interests in biological control and ecology.

Mr C.J. STAFFORD, M.Sc., F.R.E.S.(London), 5 Beacon Cres., Scarborough Qld 4020. Mr Stafford is a Company Director of Biorational Resources Pty Ltd.

Mr P. ZBOROWSKI, B.Appl.Sc., PO Box 1054, Mareeba, Qld 4880. Paul is an entomologist with DPI, Mareeba, and is a professional macro-photographer.

Resignations from Membership
(received with regret)
Dr J.A. Harris
Mrs A.R. Hill
Dr J.A. Holt
Mr T. Kerlin
Mrs M.D. Peart
Ms C. Peters
Mr R.B. Toffolon

Change of Address or Title
AUSTRALIAN ENTOMOLOGICAL SUPPLIES, Coorabell via Bangalow, NSW 2479
Mr J. BALDERSON, has retired from membership.
BAYER want address for News Bulletin and Journal to be: The Librarian, Bayer Australia Limited, PO Box 903, Pymble, NSW 2073
Dr R. BEAVER, 161/2 Mu5, Soi Wat Pranon, Tambon Dornkaew, Ampur Maerim, Chiangmai, THAILAND
Dr R.A. BEDDING, excluded under Clause 21(c)
Dr C.C. BOWER, Division of Plant Industry, NSW Agriculture, Locked Bag 21, Orange NSW 2800
Mr P.R. BURRIDGE, excluded under Clause 21(c)
Ms G.F. CARRUTHERS, Dept of Zoology, Australian National University, GPO Box 4, Canberra ACT 2601
Dr M. CARVER, altered from FULL to RETIRED membership
Mr D.J. CHAPPELL, now Dr D.J. CHAPPELL, Biochemistry GO8, University of Sydney, NSW 2006
Dr A.R. CLARKE, CRC for Temperate Hardwood Forestry, Locked Bag No.2, Sandy Bay, TAS 7005
Dr G.P. CLOSS, status changed from STUDENT to FULL member
Mr M.A. COLLIER, 7 Dover St, Clayton VIC 3168
Mr R.A.H. DAVIES, excluded under Clause 21(c)
Mr M. DE BAAR, Qld Forest Service, PO Box 631, Indooroopilly, Qld 4068
Mr R. DE KEYSER, excluded under Clause 21(c)
Mr M.L. & Mrs G.E. DILLON
Mr N. DRAYSON, excluded under Clause 21(c)
Dr H.J. ELLIOTT, returned as financial member
Dr A. ERSKINE, excluded under Clause 21(c)
Mr H. FLORIANI, 26 Mons St, Five Dock, NSW 2046
Miss J.F. GRIMSHAW, Division of Plant Protection, DPI, PO Box 1054, Mareeba, Qld 4880
Mr H. GU, excluded under Clause 21(c)
Dr C.E. HAGAN, PO Box 261, Oakley, Qld, 4401
Mr J.R. HARGREAVES, 15 Beckwith St, Ormiston, Qld 4160
Ms M.M. HARRIS, to Dr M.M. ELSON-HARRIS
Mr D.C. HOPKINS, Dept of Primary Industries, GPO Box 1671, Adelaide SA 5001
Mrs J. HORNE and Dr P.A. HORNE, now JOINT MEMBERS
Mr N.M. HUDSON, address unknown
Dr J.M. HUGHES, returned as financial member
Mr P. HUNT, excluded under Clause 21(c)
Ms J. JACKSON, now Dr J. JACKSON
Ms C. JAMES, excluded under Clause 21(c)
Mr B.A. JENKINS, now Dr B.A. JENKINS, 8 Cheltenham St, Boonah, Qld 4310
Mr A.J. JESSUP, NSW Agriculture, Gosford Hort. Postharvest Lab. PO Box 581 Gosford, NSW 2250
Dr J. KING, DPI Forest Service, 80 Meiers Rd, Indooroopilly, Qld 4068
Dr R. LAVIGNE, Entomology Section, PSIS Dept, University Station, PO Box 3554, Laramie, Wyoming 82071, USA
Ms A. LEON, now Mrs A. GRENER
A/Prof. J.D. MAJER, School of Environmental Biology, Curtin University of Technology, PO Box U1987, Perth WA 6001
Mrs L.J. McLEOD, c/- Biological Sciences, University of New South Wales, PO Box 1, Kensington, NSW 2033
Dr R.K. MENSAH, NSW Agriculture, Agric. Research Station, PMB Myall Vale Mail, Narrabri, NSW 2390
Ms V. MERCER, excluded under Clause 21(c)
Ms B. MORRIS, 59 Spencer Rd, Killara, NSW 2071
Mr F.G. NEUMANN, excluded under Clause 21(c)
Mr Z. PENG, excluded under Clause 21(c)
Dr B.C. PETERS, returned as financial member
Dr Y.K. PRASAD, 4/383 Cross Rd, Edwardstown, SA 5039
Mr W. QIAO, should be Mr Q. WANG.

Mr K.T. RICHARDS, excluded under Clause 21(c)
Mr R. RUNCIMAN, excluded under Clause 21(c)
Dr J.E. SEYMOUR, c/- Stahmann Farms, PO Box 236, MOREE, NSW 2400
Mr N.S. SHERWOOD, "Tinapagee", PO Box 1838, Tamworth, NSW 2340
Mrs E. SHUTER, excluded under Clause 21(c)
Ms L. SILBERBAUER, excluded under Clause 21(c)
Mr A. SPESSA, Dept of Zoology, La Trobe University, Bundoora VIC 3083
Dr B.F. STONE, AM, "Bindaree", 14 Sprinkbrae St, Fir Tree Pocket, QLD 4069
Mr S. SUDHI-AROMNA, excluded under Clause 21(c)
Ms C.C. SYMINGTON should be Ms C.A. SYMINGTON
Mr J.F. TOMASOV, excluded under Clause 21(c)
Dr R.M.M. TRAYNIER has RETIRED from membership; new address is 246 Duffy St, Ainslie ACT 602
Mr N.L. TREVERROW, Wollongbar Agr. Inst., Wollongbar, NSW 2477
Dr W. TUN-LIN, excluded under Clause 21(c)
Mr R.A. VICKERS, now Dr R.A. VICKERS
Dr P. WEINSTEIN, Dept of Zoology, James Cook University, Townsville, Qld 4811
Dr S.L. WENTWORTH, "Kayn Walu", Phillip Rd, Avonsleigh, Vic 3782
Ms T. WHARTON, STUDENT to FULL membership
Mr S. WINTERTON, CSIRO Division of Entomology, PMB 3, Indooroopilly, Qld 4068
Dr P.J. WRIGHT, excluded under Clause 21(c)
Dr D.K. YEATES, ANIC, CSIRO Entomology, GPO Box 1700, Canberra ACT 2601

From the Minutes

Vale

The Executive recorded with regret the passing of Society members Mr R.H. Mulder and Mr G.J. Snowball.

The Executive, with Dr P. Allsopp (Chief Editor) and others, is examining the possibility of expanding the Society's publication *Directory of Australian Entomology* to include New Zealand and Papua New Guinea. Such a publication could be a joint project of the AES and NZES.

The Executive is investigating the likely need for a small glossary of entomology which might be useful at undergraduate teaching organisations such as high schools and TAFE colleges.

Monthly reports to the Executive from the Treasurer indicate the urgent need to consider an increase in the Society's various membership fees. Mr Jennings is preparing a comprehensive report to present to the Annual General Meeting in Cairns in July.

A review of the *Journal of the Australian Entomological Society* (undertaken with Dr Allsopp and others) is continuing, with an emphasis on alternative formats (and costs) and whether income from page charges could be obtained by other means.

AES Membership as at 16 April 1993

Category of Membership	Financial	Unfinancial	TOTAL
Full	577	41	618
Joint	22	-	22
Student	101	14	115
Honorary	4	-	4
Retired	79	2	81
Sustaining Associate	6	1	7
Affiliated Society	3	-	3
TOTAL	792	58	850
Newsletter only	15	-	15

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

NOTICE OF THE 24TH ANNUAL GENERAL MEETING

The Society's 24th Annual General Meeting will be held in Cairns on Tuesday 6th July 1993 as notified in the February issue of *Myrmecia*. The agenda appears on the next page.

An error appeared in the notification. All Regional Councillors require re-nomination. The amended list is repeated below.

Call for Nomination of Office Bearers and Councillors

The following offices will fall vacant at the Society's 24th Annual General Meeting on 6th July 1993. Nominations for election should be made on the form provided on page 9 of the February issue of *Myrmecia* and should reach the Secretary no later than **27th May 1993**.

VACANT OFFICE	PRESENT INCUMBENT
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Vice President	Dr P.G. Allen
Secretary	Dr P.E. Madge
Treasurer	Mr J.T. Jennings
Public Officer	Dr I.D. Naumann
Chief Editor	Dr P.G. Allsopp
Business Manager	Dr G. Clarke
News Bulletin Editor	Dr M.J. Fletcher
Technical Editors	Dr A.L. Bishop
	Dr I.D. Naumann
	😐 Dr A. Wapshere
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	😐 Dr S. Shattuck
NSW	😐 Mr J.G. Clancy
	😐 Mr R.J. Faulder
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NT	☠ Mr P. Dostine
QLD	😐 Dr H.A.C. Fay
	☠ Mr B. Franzmann
	😐 Ms M. Griffiths
SA	☠ Dr A.D. Austin
TAS	😐 Dr T. Kingston
VIC	😐 Mr A. Henderson
	😐 Dr A. Yen
WA	☠ Mr J. van Schagen
Representative Councillors	
Ent. Soc. NSW	✌ Dr G.R. Brown
Ent. Soc. QLD	✌ Ms C. Neale
Ent. Soc. VIC	✌ Dr R. Field

😐 requires re-election
☠ not eligible for re-election
✌ to be nominated by the Societies
Those incumbents not marked continue in the position for the next twelve months.

Please Note:

The President is elected annually for a maximum term of two years. Dr G.H.S. Hooper is therefore eligible for re-election.

The other Officers of the Society were appointed for a term of two years at the last AGM in Hobart. There is no maximum term stipulated for these positions.

Following the resignation of Dr G. White from the position of Technical Editor, Dr A. Wapshere was appointed by the Executive to fill the position until the next AGM when an election is to be held. Dr Wapshere is eligible for election.

If only one valid nomination is made for any position, that nominee will be declared elected at the AGM. If more than one nomination is received, a postal ballot will be conducted.

PROVISIONAL AGENDA FOR AGM

Australian Entomological Society Incorporated

24th Annual General Meeting

Matson Plaza Hotel, Cairns
at 4.00 p.m.
on Tuesday 6th July 1993

Provisional Agenda

1. Opening
2. General Announcements
3. Announcements of Proxies and Apologies
4. Deaths of Members recorded since 23rd Annual General Meeting
5. Minutes of 23rd Annual General Meeting (published in *Myrmecia*, February 1992)
6. Matters arising from the minutes
7. Executive Annual Report, including reports of Treasurer, Chief Editor, News Bulletin Editor and Business Manager
8. Committee Reports:
   Conservation Committee
9. Competitions and Awards
   New Honorary Member
   AES Research Grants
   Phil Carne Prize 1993
   Biological Illustration Competition 1993
10. Business arising from 44th Council Meeting, Hobart
11. Announcements of Office-Bearers and Councillors for 1993
12. Report of the Organising Committee, 24th Annual General Meeting
13. Report of the Organising Committee, 25th Annual General Meeting (Adelaide)
14. Other Business (arranged with the Secretary no later than 8 June 1993)
15. Close

Paul MADGE
Hon. Secretary

BURNLEY CLOSES

Following a recent review, major changes are being implemented in the Victorian Department of Agriculture's Institute of Plant Sciences; these changes will have a profound effect on the functioning of the Entomology section of the Institute.

On April 6th, The Department Secretary (Mr Michael Taylor) and the Chief Scientist (Dr Keith Steele) announced that, effective immediately, the IPS would be refocussed and renamed the Institute for Horticultural Development (IHD). In essence, the new institute will be structured on the basis of horticultural industries rather than on scientific disciplines. It will consist of four "industry programs" (fruit, vegetables, ornamentals and potatoes), with a cross-work of four "function" groups, of which Plant Health (including entomology, virology, mycology and nematology) is one. The Director of the Institute is Mr Dennis Richards.

The new institute is to be based at the Department's Knoxfield site, about 28 km east of the Melbourne GPO. Two of the four campuses of the former IPS (Burnley Gardens and Frankston) will be vacated and sold. The campus at Toolangi (60 km NE of Melbourne) will be upgraded to become the National Potato Improvement Centre.

Scientists with interests in the IHD industry programs will be relocated to Knoxfield (or Toolangi) in the next few months. Scientists with expertise in pastures or field crops but who do not wish to immediately move to the regional Pastoral & Veterinary Institute, Hamilton (260 km from Melbourne) or the Institute for Dryland Agriculture, Horsham (280 km from Melbourne) are also entitled to relocate to Knoxfield. However, "as vacancies arise", positions and financial resources associated with these industries will be transfered to these institutes.

The Biotechnology Division of the former IPS will not be included in the IHD. Biotechnologists currently at Burnley will be integrated with the Department's pasture plant improvement program and eventually relocated to the University of Melbourne, under the joint leadership of a Departmental Regional Manager and Prof. Adrienne Clarke (Plant Cell Biology Research Centre, School of Botany).

Entomology as a discipline is not being maintained and the section will be disbanded. The review team disregarded the importance of maintaining a core expertise or "critical mass", beyond two or three scientists, in any scientific discipline except biotechnology. It is intended to eventually have a complement of entomologists at each of the large regional institutes. The Burnley entomologists feel that the fragmentation of the group, along with the move to inferior facilities at Knoxfield, may seriously hamper the achievement of project goals and damage our reputation with industry. Nonetheless, the group will do its utmost to maintain and strengthen existing collaborative links and research interests ie. don't give us away!

THE ENTOMOLOGISTS
IPS/IHD, Burnley

CONFERENCE REPORTS

"Southern Connections" Conference

Hobart, January 1993

The first meeting of the "Southern Connection" group was held jointly with the Australian Systematic Botany Society and the Ecological Society of Australia, from January 18-22 at the University of Tasmania, Hobart.

"Southern Connection" is an international group formed to promote communication among biologists studying the flora and fauna of the southern hemisphere. The biota of the southern temperate region (southern South America, New Zealand, Australia/Tasmania and southern Africa) often shows phylogenetic relationships and ecological similarities, reflecting a common origin on lands which once comprised the old Gondwana supercontinent.

The meeting was well attended and, although most participants were from Australia and New Zealand, there was also a significant number from Chile and Argentina. Special symposia were held on southern hemisphere conifers, *Nothofagus* ecosystems, and ecology and sustainability in southern temperate ecosystems. Among the mostly botanical presentations were a few entomological talks and posters.

I found the Hobart Southern Connection meeting to be one of the most enjoyable and informative scientific meetings I have ever attended, and special thanks go to the host, Dr Bob Hill of the University of Tasmania. The next meeting is scheduled for January 1996 in southern Chile, probably Valdivia. It will include extensive field trips and a symposium on southern hemisphere terrestrial and freshwater invertebrates. Entomologists interested in joining the Southern Connections network and receiving its newsletter should contact: Dr Robert S. Hill, Department of Plant Sciences, University of Tasmania, GPO Box 252C, Hobart, Tas. 7001.

Daniel J. BICKEL
The Australian Museum
Sydney

Biodiversity Assessment Workshop Macquarie University

3-4 May 1993

A workshop to discuss biodiversity assessment was held at Macquarie University 3-4 May 1993 sponsored by the NSW Environment Protection Authority, NSW National Parks and Wildlife Service, NSW Forestry Commission, the Research School of Biodiversity and Bioresources and the National Farmers Federation.

The workshop included invited papers covering current research and the applications and needs of current and potential users of rapid biodiversity assessment (RBA). The final morning involved an all-in discussion about future directions for both users and research workers.

The workshop brought together scientists undertaking RBA, particularly in the invertebrate sphere, environmentalists, ecologists and representatives of the public and private sectors.

A wide range of topics and opinions were placed before the delegates and the following comments reflect my impressions and may not be the views of many of the delegates (I eagerly await letters to the editor on these topics).

One of the more interesting topics was the concept of total biodiversity, including all microbial life in addition to vertebrates,

invertebrates and plants. It was generally agreed that current biodiversity assessments based on flowering plants and vertebrates provided little information about the major bulk of the biodiversity present in any area under study and that inclusion of the invertebrates was essential. However, most "higher" forms of life contained a great diversity of other forms of life within them and these were also a significant component of the biodiversity of a region, particularly if preservation of total biodiversity for either environmental or possible future pharmaceutical benefit are driving factors. How such "total biodiversity" could be assessed was not really addressed by the workshop and it remained as a difficult complication in the minds of many delegates.

The point was also made that in impact assessment whether of natural phenomena or of man-made perturbations, ecological sustainability was a long-term requirement and results of RBA in disturbed habitats may only provide information about what, in effect, are short term changes that provide little insight into the long term process.

The "Rapid" part of RBA can be divided into two components - sampling and analysis. Firstly, techniques for sampling the biodiversity of an area have been developed and are constantly being improved. Jonathan Majer (Curtin University of Technology, Perth) has been undertaking such work in rehabilitated minesites on behalf of mining companies and has developed a technique which he is satisfied provides sufficient information for the questions he needs answered. His techniques, however, are unsuitable for use in the kind of rainforest canopy studies being undertaken by Roger Kitching (Griffith University, SE Qld).

Secondly, the analysis of the material collected provides great opportunities for shortcuts and the bulk of the workshop concentrated on means of assessing whether these shortcuts provide sufficient information for management decisions to be reliable and valid.

Several options were explored in facilitating appraisal of the material collected. These included sorting to morphospecies or recognisable taxonomic units (RTUs), using non specialist labour, selecting representative groups in the hope (or knowledge) that they would reflect the biodiversity of the whole, or merely sorting to family level and using the numbers of families to represent the biodiversity of the whole. Research that would provide a basis for reliance on any of these techniques has, in some cases, been undertaken and the workshop highlighted other research areas that should be investigated.

A point that was made by a number of speakers was that legislation is frequently based on the rare ("endangered") fauna and it is the range of rarely encountered, ephemeral or genuinely rare species that provide the bulk of the biodiversity of a region in contrast to its biomass. Approximate methods of sampling or analysis may miss more of these groups than of the groups dominated by fewer common species. In other words, RBA may be in danger of being biased towards the common species and may not provide an acceptable view of the true biodiversity.

Research that might help provide guidelines for minimising these biases in analysis and sampling techniques was also discussed in the final session.

In my opinion, RBA has been developed in response to a lack of specialist taxonomic expertise in many key groups. I came away from the workshop with the conviction that whatever direction biodiversity assessment takes, it needs to be underpinned by specialist taxonomic input.

The results of the workshop will be published by the Research School of Biodiversity and Bioresources at Macquarie University and notification of its availability will be made in *Myrmecia*.

Murray FLETCHER
NSW Agriculture
Rydalmere

INTERNATIONAL ORGANISATION FOR BIOLOGICAL CONTROL

The International Organisation for Biological Control, IOBC, is the only worldwide organisation to promote biological and integrated control of noxious animals and plants.

IOBC also publishes *ENTOMOPHAGA*, a Journal of Biological and Integrated Control which publishes original research articles dealing with the various aspects of the biological control of pest organisms.

IOBC is a Commission of the International Union of Biological Sciences, with liaison status with FAO.

In the early 1970s the South and East Asian Regional Section (SEARS) of IOBC had many members from Australia but currently there are none, although some Australians belong to the Northern Regional Section.

Professor R. Muniappan, recently elected as President of IOBC/SEARS, has extended an invitation to members of this Society to join IOBC/SEARS.

Individual membership of IOBC/GLOBAL+SEARS (including *Entomophaga*) costs $US85 per year. Membership without *Entomophaga* is only $US20 per year. There is also Institutional membership available at $US250 per year.

Further information and membership application forms are available from:

Mari Marutani
Sec/Treas. IOBC/SEARS
Agricultural Experiment Station
University of Guam
Mangilao, Guam 96923
USA.

DON'T FORGET NEW ZEALAND!

The following letter has appeared on my desk from David Steven of the Horticulture and Food Research Institute of New Zealand Ltd. Although it was sent to me personally, I feel that the sentiments expressed need to be brought to the attention of all Australian entomologists. As pointed out in David's letter, closer ties between the entomologists of the two countries will give benefits to both.

David's letter reads:

"I am keen to see greater trans-Tasman links develop in Entomology. The pathologists with their biennial Australasian Conference are a jump ahead of us for once. There are enough similarities in the pest complexes we each face, and in more basic topics, for mutual benefit to come from well focussed cooperative programmes. The knack is going to be to pick the projects, either in basic research areas or IPM programmes. What is your opinion on this matter?

As well I believe that there would be benefits for both parties in having Australian and other international links to mention in funding bids.

I would also like to have NZ staff as regular participants in Australian conferences and vice versa. Our practical entomological conference is that of the NZ Plant Protection Society (used to be called Weed and Pest Control Society), held in August each year. I intend to stand for committee this year to see if I can influence matters. The NZ Entomological Society, which meets in May, tends to be more informal, and to focus more on conservation-systematics topics. For the last 12 years May for me has been the busy time of kiwifruit harvest, so that I have not been a regular attender. How do the Australian entomological societies stack up?"

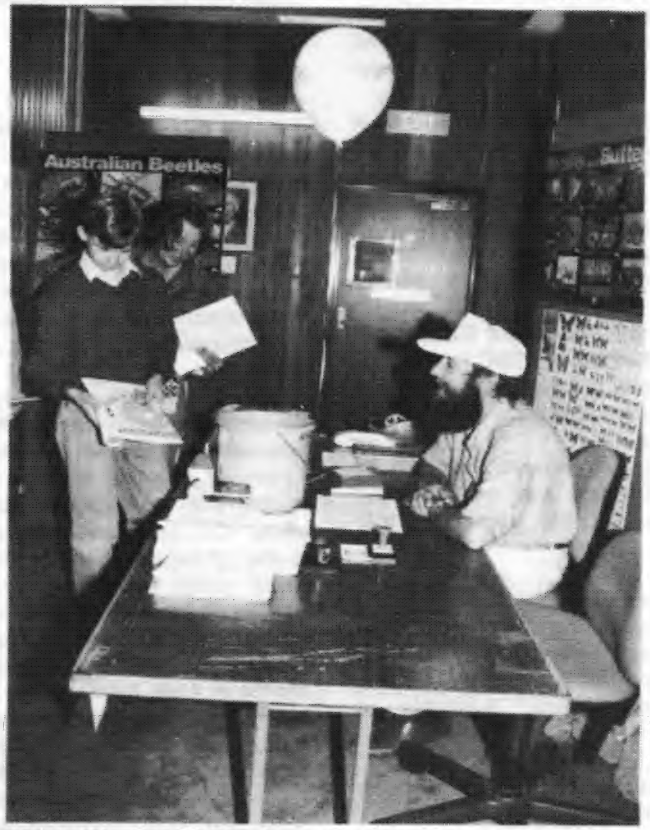
Perhaps members could use the forthcoming Annual Conference in Cairns to consider ways and means of achieving closer links within the current frameworks of our various organisations. Perhaps one day we might even hold our conference in New Zealand!!

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

ANU and ANIC

The staff of the ANIC are breathing a collective sigh of relief with the completion of another Open Days, this year called Biota 93 (see photos on next two pages). An estimated 35,000 people visited the CSIRO Black Mountain Site, with the majority touring the ANIC collection halls in search of their favourite insect friends and foes. Everyone had a great time, although most found it difficult to stay excited after answering the same questions 10,000 times. We are all looking forward to the next Open Days, and we are thankful it won't be until 1995.



BIOTA 93: Geoff Clarke explains some of the finer points of the discipline of Entomology. Note the ANIC Fund donations bucket. [Photo: John Green]

There have been several recent additions to the staff of the ANIC. John Trueman has been appointed as a Postdoctoral Fellow in the Diptera Unit. John will be working with Peter Cranston on the development and testing of new methods for rapid biodiversity assessment using invertebrates. As the first stage of their study, John and Peter, together with Penny Greenslade, have travelled to the wilds of north east Tasmania to collect samples for evaluation. John reports good success, although he is still in the process of sorting and tabulating the results.

David Yates has also been appointed as a Postdoctoral Fellow in the Diptera Unit. David will be working on the phylogeny of Asiloidea as well as generally assisting with the collection and curation of flies.

In the Databasing Unit, Ben Thompson has been appointed under the CSIRO Traineeship Scheme. Ben will be working on development of database techniques as he learns the intricacies of taxonomic research and insect collection and curation.

Numerous visitors have spent time in the ANIC over the past few months. Ian Common (from Toowoomba) visited the Lepidoptera unit to complete the manuscript for the first volume of his *Oecophorine Genera of Australia*, which concentrates on the *Wingia* group. Jason Weintraub (from The Natural History Museum, London) also visited the lepidopterists to work on fern-feeding geometrids. Furumi Komai (Osaka University) returned to Japan after 4 months of very productive research with Marianne Horak working on the Australian grapholitine tortricids. Alan Andersen paid the Hymenoptera unit a visit for a few days to have

BIOTA 93: Tony Watson strikes a proprietorial pose outside the Termite and Spider display tent, which was erected by the side of ANIC. The message under the sign - *A flea circus may be a good act, but it takes termites to bring down the house.* [Photo: John Green]

BIOTA 93: Familiar faces amongst the visitors enjoying one of the displays include Alison Bawden, Chris Schacht, John Stocker, Jim Peacock and Brian Fletcher. [Photo: John Green]

BIOTA 93: Vanna Rangsi discusses a part of the ANIC collection with an interested visitor. [Photo: John Green]

a look at assorted ants. The coleopterists have been especially busy, with Don Chandler (University of New Hampshire) looking at pselaphids, George Ball (University of Alberta) examining carabids, and Woody Horning (Macleay Museum), Jeff Williams (Lansdowne, NSW) and Al Newton and Margaret Thayer (Field Museum, Chicago) doing general sorting and curation.

A large number of people toured the ANIC as part of the "Managing Biodiversity Information" program organised by ERIN. Some 30 entomologists, botanists and biological database managers took part in the program, with Dan Janzen (University of Pennsylvania) presenting two seminars on biodiversity in Costa Rica, and Scott Miller (Bishop Museum, Honolulu) taking time out to have a look at the moth collection.

Work on the Cape York Land Use Survey is progressing well, although the wet weather on the Cape has reduced the collecting effort greatly because of lack of access. Paul Zborowski, the field coordinator for the project, took the opportunity to visit the ANIC recently to discuss collecting and recording methods with both ANIC and ERIN staff involved in the study.

From the ANU comes the news that Ting Kui Qin submitted his Ph.D. thesis exactly 3 years to the hour from the time he started his research with Penny Gullan. This is one of the best examples of a student following the schedule I have ever heard of. Meanwhile, Lyn Cook has decided she has seen enough of the Golden Sun Moth, and is returning to her Honours work on speciation and chromosomal evolution in *Apiomorpha* as part of a Ph.D. program with Penny.

Steve SHATTUCK
Regional Councillor

CSIRO Entomology

The 1993 BIOTA Exhibition has come and gone, and was, by all standards, highly successful (see photos). Weather was perfect, and some 33,000 people visited the Black Mountain site over the three days. All CSIRO Divisions in the ACT had displays on show, and these covered topics as diverse as radio-

astronomy, global warming and molecular biology. Entomology had a series of displays which covered the major activities of the Division, and these were crowded throughout the event. As always, the ANIC display of spectacular and unusual insects was a big favorite, and the biodiversity theme added a take-home message.

Other events in the Division include an invitation to Richard Milner to chair the Expert Advisory Committee to the International Institute of Biological Control's locust *Metarhizium* project. Richard will be off to Benin for the first of these meetings in early June. Travis Glare hopped the Tasman to spend a short time working in Richard's lab studying the morphology of phialides of *Metarhizium* spp.

Among other comings and goings Art McIntosh (USDA, Columbia, Missouri) concluded a six month stay in the Division. He had been working with Peter Christian and Carol Fernon on establishment of insect cell lines for use in the recombinant virology programs. Steve McKechnie, from Monash University, was also in the Division, and spent about six weeks working with Peter East.

Doug Waterhouse continues to celebrate the lifestyle of an Honorary Research Fellow, with the publication of two new works, "The Major Arthropod Pests and Weeds of Agriculture in Southeast Asia" and Supplement 2 of "Biological Control Pacific Prospects" for ACIAR.

"Termites" have been typically busy in the last few months. Tony Watson and Hilda Abbey's "Atlas of Australian Termites" has now gone to press, and should be available in the near future. Michael Lenz has been clocking up some miles, with a six week visit to the Northern Hemisphere which included the USA, Germany and the Czech Republic, a visit to Thailand (together with Leigh Miller) to advise on an ACIAR supported "termites in forestry" project, and a visit to Perth, where he launched "TermiMesh", a stainless steel mesh which can be incorporated into buildings during their construction, and which should deter small visitors in the future.... Meantime staying somewhat closer to home, Tony Watson visited the Museum of Victoria for a week in March to check on specimens in their collection.

Ray Akhurst and Joanne Daly met up with Gary Fitt in beautiful Hawaii when they attended the Pacific Entomology Conference there in March. A big drawcard at that event was the symposium on resistance of insects to Bt. That topic, among others, will be discussed further at the Second Canberra Bt Meeting, which is being organised by CSIRO Entomology, and which will take place next September.

David DALL
Regional Councillor

NEW SOUTH WALES
Metropolitan

BCRI Rydalmere

As this contribution is being written, the three Acting Directors (Entomology, Plant Pathology and Chemistry) are in their last week. The three positions are being replaced by a single Institute Manager who starts in the first week of May. Responsibility for research leadership in the three disciplines will be taken over by senior research workers who will be given an allowance to add research leadership to their current responsibilities. The Entomology Research Supervisor will be Alan Clift.

Dr Jasdip Singh Gill has commenced working, in an honorary capacity, in the Branch both with Victor Rajakulendran and Murray Fletcher. Jasdip has an M.Sc. on taxonomy of typhlocybine leafhoppers and a Ph.D. and some years' experience on biocontrol of vegetable pests, all from the Punjab.

Danuta Knihinicki is maintaining our presence in the acarological field in the expectation that Eberhard Schicha's former position will not be filled in the short term, if at all. Research work on mites has stopped but Danuta is continuing to provide identifications in the area of agricultural mites. She is also about to marry David McKenzie, a soil scientist from the Institute and we wish them every happiness.

Murray Fletcher is delving into female genitalia looking for insight into the higher classification of the Cicadellidae. The results will be presented at the D.A. Young Memorial Symposium in Delphi, Greece, in August. The conference will be part of a four week trip to the Natural History Museum, London and the National Museum of Wales, Cardiff, funded by the Australian Academy of Science International Exchange Program.

Graeme Baker had his hands full with locust outbreaks in western NSW during the early part of the year but things have now started to quieten down. There is concern that the extent of egg beds in the north west and far west of the State may lead to high populations and possible swarming next Spring, if conditions favour survival of the hatchlings. He has also been monitoring large populations of wingless grasshopper in southern areas but damage has been minimal from this species. Graeme also attended the 6th Grassland Invertebrate Ecology Conference in Hamilton, NZ in February.

Martin Horwood and Mike Heesom have made significant progress in studying resistance in German cockroaches, showing that resistant patterns in Australian populations are similar to those discovered in USA. Grant Herron and Jeanette Rophail have continued monitoring resistance in *Myzus persicae*, particularly from cotton in the Warren area, and have now established a laboratory culture of *Aphis gossypii* in order to develop a bioassay technique for this species.

Visitors to the Institute have included Dudley Pinnock and Jane Drummond of the Waite Institute who spent time with Gary Levot and Andrew Kotze. Gary Levot continues to be involved in murder investigations and was called to give evidence in court in February.

The citrus section at BCRI has been augmented by John Forsyth, Program Leader (Citrus), who will take over much of the administrative load on the citrus entomologists and pathologists.

Murray FLETCHER

Department of Medical Entomology
University of Sydney at
Westmead Hospital

Richard Russell has published a revised edition of his manual "Mosquitoes and Mosquito-borne diseases in Southeastern Australia" which is a guide to mosquito biology and the relationship of mosquitoes to disease. The manual also includes guidelines for the surveillance and control of pest and vector species, and keys and an atlas for the identification of adults and larvae of 67 common species in SE Australia. (It is available from the Department of Medical Entomology at Westmead Hospital with a cheque made out to the University of Sydney for $45.00 per copy).

Richard attended an international symposium on "house dust mites, asthma and domestic design" held in Sydney in February. The meeting focussed on the proposal that increasing ventilation and reducing humidity in Australian houses would reduce dust mite populations, as had been shown in Denmark.

Peter Wells has been on field trips to Bateman's Bay and Port Stephens to collect *Aedes vigilax* mosquitoes for infection with Ross River virus to study vector competence. Peter and Paul McKeown spent an eventful time on the field trip to Port Stephens which included the use of Port Stephens Council's 8-wheel drive all terrain vehicle - the "ARGO". Early results of Peter's vector competence investigations indicate extensive variability in the growth of different strains of Ross River virus in mosquitoes. This has implications for human health.

The arbovirus program has had a productive year. Arboviruses were isolated from 65 mosquito pools, half as many again as in previous years. Sindbis virus was detected again this season; it was not recorded in either NSW or Victoria last year, although it is generally thought to be active every year. In February mosquito numbers at one inland trapping location exceeded 14,000 per EVS trap, the highest number recorded since trapping began in November of 1984. Overall, mosquito numbers across NSW have been variable but, generally, populations remained within the normal ranges for each location.

Two temporary members of staff have finished their times with us. Paul McKeown, a trainee Laboratory Assistant who was with us for three months, is continuing his training in the Microbiology Dept. Karen Willems has also had to leave her position and we wish her well.

Visitors to the Unit include Dr Florence Fouque from l'Institut Pasteur to discuss aspects of investigating and controlling malaria and dengue in French Guyana, and Karen Smith, a trainee Environmental Health Officer from Port Stephens Shire Council to look over our laboratory and discuss aspects of mosquito surveillance and control.

John CLANCY
Regional Councillor

The Australian Museum

Professor Kiyohiko Ikeda arrived a month ago to begin a Visiting Research Fellowship at the museum. He is based at Yamanashi University west of Tokyo. His research interest is structuralism, philosophy and evolution and he is a taxonomist of cerambycids and lucanids (Coleoptera).

Robert Lachlan has collected some fabulous flies and spiders from Papua New Guinea for David McAlpine and Mike Gray. One of the spiders has the chelicerae modified into raptorial claws.

Geoff Williams' project on rainforest pollination, now completed, has produced a very substantial collection of insects associated with plant reproduction. These have been donated to the museum.

Deb Kent dropped by to look at our Platypodidae (Coleoptera) and Max Day and Murray Fletcher spent a day digging out rare publications on Cicadellidae.

Jason Weintraub (Entomology Department, Natural History Museum, London) spent several days at the AM working on the geometrid (Lepidoptera) fauna of Australasia and Oceania. Megan Vogel from the Texas Memorial Museum (Austin) paid us a fleeting visit, also to look at our geometrids.

Don Chandler based at the New England University visited to study Pselaphidae (Coleoptera).

Staff in the Entomology Department received scores of public enquiries during summer about old lady moths in Sydney houses. This season the moths seem to have enjoyed very favourable breeding conditions.

Rieks van Klinken from the Department of Entomology, University of Queensland, visited Shane McEvey for several days to work on Drosophilidae (Diptera). His baiting project near Brisbane has revealed some unexpected ecological results.

Shane McEVEY
Regional Councillor

NEW SOUTH WALES
Country Areas

CSIRO Cotton Research Unit, Narrabri

CSIRO and NSW Agriculture staff at Narrabri are busily developing plans for expanded research effort following the approval of the CRC for Sustainable Cotton Production which will commence on July 1. With 6 core partners: CSIRO, NSW Agriculture, QDPI, University of New England, University of Sydney and the Cotton R&D Corporation, the CRC will conduct a wide-ranging research program focussed on various sustainability issues facing cotton production, including pest management. A number of new student and research positions will flow from the CRC.

Narrabri Agricultural Research Station has been fully utilising its new conference facilities during the last few months. In December 1992 Gary Fitt organised a workshop on "Developing a heliothis forecasting service in Australia" where various research, extension and industry bodies discussed the possibilities, and need, for a means of forecasting heliothis outbreaks in cropping areas. The workshop resolved that we need better information on the economic value of forecasting, even though the research base is now available for rudimentary forecasts.

In late January Wayne Rochester, formerly of CSIRO Canberra, moved to Narrabri to commence work on a new project with the Centre for Tropical Pest Management. The project is to develop a generic spatial model which will provide a framework for simulating migratory movements of various pest insects, and the first target species will be *Helicoverpa*. Wayne will work with Martin Dillon, Gary Fitt and Myron Zaluki on the project which will be fully integrated with the HEAPS *Helicoverpa* model developed at Narrabri and the Generic Insect Model being developed at CTPM in Brisbane.

Gary Fitt was an invited speaker in February at a workshop in Orlando, Florida, on the management of Bt resistance. The workshop was organised by the US Bt Management Working Group, a consortium of Bt companies. Integrated management of transgenic plants and Bt sprays was a major topic of discussion. Gary then spent some time in Mississippi before attending the Pacific Entomology Conference in Hawaii, which was dominated by a 2 day symposium on Bt resistance.

Neil Forrester and Gary Fitt are also involved in the planning committee for the inaugural World Cotton Research Conference to be held in Brisbane, 13-17 February 1994. It is

sponsored by the International Cotton Advisory Committee, FAO and the Cotton Research and Development Corporation.

Yanco Agricultural Institute, Yanco

Peta Hassall joined the Entomology team in April, replacing Ann Hickey (née Taylor), who is currently in Cambodia.

David James' work on pheromones in pentatomids, reduviids and nitidulids has taken significant strides forward in recent months. Synthetic versions of male-produced aggregation pheromones of spined citrus bug and the assassin bug *Pristhesancus plagipennis* have both demonstrated significant attraction to these bugs in laboratory and flight cage tests. Jeffrey Aldrich (USDA), Chris Moore (QDPI) and Kenji Mori (University of Tokyo) have all played major roles in the development of these synthetic pheromones.

Evaluation of synthetic pheromones of *Carpophilus* spp. has continued. This season was a bumper one for *Carpophilus*, which are increasing in importance as pests of ripening stone fruit in southern Australia. Populations were monitored in locations as diverse as Yanco, Shepparton, Cobram, Renmark and Windsor (NSW). Trials have shown that combinations of pheromone and fermenting material are highly effective in attracting and trapping *Carpophilus* beetles and may provide the basis of a management system.

Col Bower leaving entomology for NSW Agriculture Head Office at Orange.

Richard Faulder was at the Australian Museum in Sydney during mid-February, continuing his research on mouse spiders and obtaining advice from Mike Gray about Richard's Master's thesis.

Agricultural Research and Veterinary Centre, Orange

The number of entomologists at A.R.& V.C. Orange was halved last November when Col Bower took up an administrative appointment at NSW Agriculture Head Office, also at Orange.

Col joined Graham Thwaite at Bathurst in 1975 and together they worked on pest problems associated with the deciduous fruit industry. They moved further west to Orange in 1980 to occupy laboratories in the newly completed Research Centre. From there Col undertook a series of projects on mites, San José scale, apple dimpling bug and European earwig. In recent years he has coordinated three major HRDC funded projects, two of which have had input from colleagues in other states.

In his new role as a Program Leader within NSW Agriculture's Horticulture Programme he will have a broad scientific rôle.

Graham Thwaite received an urgent call from Bill Woods and Nic Monzu, WA Department of Agriculture, to assist them develop an eradication program for codling moth. This serious pest of apples is usually absent from Western Australia but every now and then it

turns up in one of the apple growing districts. This time it was Bridgetown in the southwest and Graham spent a week there in February. The Department has embarked on a campaign to rid the State of the pest by 1995.

University of New England
Department of Zoology

Stephen Asante is now busy writing his Ph.D. thesis titled "Biological and Ecological Studies on the Woolly Apple Aphid with Reference to Control".

Private Sector

Don Scambler, as a Research Associate of the Australian Museum, continues to work on the cerambycid tribe Stenoderini, now at the Pearce's Creek Annexe of the North Coast Agricultural Institute, Wollongbar. He has several papers in progress, varying from half-finished to accepted for publication.

Toward the end of March John Gillett returned from a six week FAO consultancy evaluating the quarantine capacities of ten of the Caribbean nations. He is now back at his farm harvesting this years' macadamia crop.

NORTHERN TERRITORY

NT Health
Medical Entomology
Branch

The sudden onset of dry season conditions has caused a rapid drying of storm water drains and seasonally flooded areas. The longer lasting swampy areas and flood plains are now starting to produce a proliferation of mosquitoes, and hence keeping the Branch busy sorting monitoring traps and coordinating mosquito control in the larger towns. Luckily Alice Springs is very dry and there has been no great production of mosquitoes this dry season.

At the tail end of the wet, Peter Whelan and Paul Donaldson conducted a week-long *Aedes aegypti* survey of the Carpentaria, Tablelands and Barkly and Stuart Highways, as far east as Borroloola and Camooweal and south to Tennant Creek. They teamed up with Philippe Porigneaux, EHO in Tennant Creek, to look at local mosquito and fly problems. No *Ae. aegypti* were found in the NT, but very large numbers of *Aedes normanensis*, the vector of Ross River virus in the inland, were found throughout the Barkly area and a public alert was issued.

Peter Whelan and Gwenda Hayes have presented the biting insect report to the Department of Lands on the South Darwin area, and are working with the planners on the future expansion of Darwin.

Gwenda, Kerith Donnan and Ross Nowland have been processing mosquito collections for virus studies. This work is continuing from the vicinity of the sentinel chicken flocks to correlate findings from both avenues. Ross and Paul have just completed a drain survey of Darwin - this is being followed up with Darwin City Council to remove or control mosquito breeding in urban areas. The program has been very successful, with mosquito numbers well down in most urban areas.

Brian Montgomery has taken up the *Culicoides* work and is quickly gaining expertise with the various species around Darwin. He will be attending the marine workshop in July in Darwin to look at breeding sites of *Culicoides ornatus*. Brian is also tackling the imported malaria cases and getting ready for a flood of cases with the current Arafuran Games.

DPI&F, Entomology Branch

The Entomology Branch has been concentrating on extension over the last few months of the wet season, when horticultural activity is at a minimum. Three Agnotes have been published on ants, *Monolepta australis* and pests of mangoes.

At the well attended Open Day at Douglas Daly Research Institute, Stuart Smith and Michael Neal presented displays on yellow-winged grasshoppers and soil insects at crop establishment. Kaye Hergstrom and Stuart Smith presented summaries of research findings on *Thrips palmi* and hot water dipping of mangoes respectively to a meeting of horticultural growers in March. Kaye also gave seminars to the citrus growers, ornamental growers, and DPI&F staff on IPM. After all this production of "hot air" it is hoped that feedback from growers will help the Branch target future research to growers' needs. A lot of effort has also gone into preparing the Northern Territory's

case for lifting the quarantine restrictions due to *Thrips palmi*. SCARM has delegated a working group of quarantine officers to deliberate on this issue in May.

DPI&F, Weeds Branch

Wendy "Frequent Flier" Forno and Mic "World Catalogue" Julien, both of CSIRO Division of Entomology in Brisbane, passed through Darwin *en route* to Jabiru for a salvinia workshop. They were accompanied by Colin Wilson. Wendy later returned to Darwin for discussions on the allocation of Federal funding of the mimosa biological control project.

Merrilyn Paskins has been appointed to the position vacated recently by Carey Smith, thus creating a vacancy of her own. The delousing squad is currently attempting to clear a path through the bureaucratic minefield to get that position filled [We all wish you the best of luck - *Ed.*]

A staff exchange has recently been completed between CSIRO Entomology in Brisbane and DPI&F Weeds Branch. Leslee Hill, who works mainly on biological control of spinyhead sida, went to Brisbane to become the full bottle on the next sida insect. Ryan Zonneveld visited Darwin to assist with rearing our mimosa bud-feeding weevil and stem-boring moth. Ryan visited the crocodile infested billabong where Wendy Forno had laughed in the face of mortal danger and gone for a swim. Ryan could not be persuaded to emulate his fearless leader, saying "I forgot my swimmers". That never stopped Wendy!

CSIRO Division of Wildlife and Ecology

Coach Alan Andersen reports that his charges in the U19 NT Women's Volleyball Team swept "all" before them at the recent national championships - particularly the ACT "B" side. His schedule for the next few months is as busy as ever. Apart from coordinating the volleyball side of the upcoming Arafuran Games in Darwin, Alan is preparing for a four months sojourn in the US during which he will conduct a research project on Arizona ant community structure, attend the Ecological Society of America meeting in Madison, Wisconsin, and spend some time at Ed Wilson's lab at Harvard. In March he attended a divisional meeting on biodiversity - what is it and how is it best measured?, and also attending a meeting of the CSIRO minesite rehabilitation group at Victor Harbour.

CSIRO Division of Entomology

Things have been relatively quiet at TERC over the last few months. Grant Farrell spent most of March in Melbourne in a partially successful attempt to throw an as yet unidentified tropical illness that has been afflicting him since January. In his absence, multimedia personality Mark Lonsdale and super TO Annie Lane battled the flood waters and crocs to keep the field work going, although new work on *Neurostrota gunniella* planned for the 1992/93 wet season was postponed. With the heavy rainfall through February, mimosa has been flowering intensively and early indications are that releases of the flower-feeding weevil *Apion aculeatum* were much more successful this year, although establishment of viable field populations may still be another season off.

With the wet season behind us, attention is turning to establishment of dry season experiments and the dreaded *Calligrapha/Sida* problem is top of the list with a new field program planned to start at the end of April.

Mark Lonsdale has been exhibiting distinctive dry season migration patterns recently. In Weipa for CSIRO's multi-divisional minesite rehabilitation group in mid April, the last week of April sees him in Port Macquarie for the ANZECC Weed Task Force meeting, and then in May the CRC for Tropical Pest Management is honoured by his presence at a TPM-sponsored biological control course.

Michael Storrs took a break from the salvinia project to drop into TERC after Easter, *en route* to a holiday in Broome. Michael is enjoying the end of the wet season as the problems of travelling around Kakadu recede with the falling water levels. Peter Jacklyn, former TERC Ph.D. student and now with ABC Radio's Green and Practical was in the Top End for ten days in late March and spent several days at TERC renewing old friendships and taping interviews for future stories.

Office of the Supervising Scientist, Alligator Rivers Region Research Institute

Peter Dostine and Greg Rippon both

attended the "Specialist Workshop on Ecotoxicology" held at the Myall Vale Research Station, Wee Waa, to discuss assessing the impact of cotton pesticides on aquatic systems. Greg visited ANSTO and the Centre for Environmental Toxicology before returning to Jabiru. ANU Honours student Michael Smith is here for a few months working on faunal recovery in a stream polluted by past mining activity. Recent visitors to ARRRI included several western brown snakes found (repeatedly) in the vicinity of the new conference room over a two week period.

Thanks to all NT members for their cheerful assistance with the compilation of newsletter reports over the last few years. Cheers!

Peter DOSTINE
Regional Councillor

NORTH QUEENSLAND

QDPI - Mareeba

Don Sands, Brian Fletcher and Marie-Louise Johnson, CSIRO Division of Entomology, visited Mareeba in early March to discuss fruitpiercing moth research with Harry Fay and to acquaint themselves with agriculture and pest problems in the region.

At the same time Ian Cunningham had managed to fly into Batavia Downs as part of the CYPLUS survey work. Ian's worst fear was that he may get stuck there for longer than the 7 days required for the mail plane to make its return visit. As it was, the wet conditions confined his activity to trap clearing and line wetting, with an odd fish reported.

Post-graduate students from the CRC for Tropical Pest Management, Michael Ryan and Michael Ross, spent part of late March in the north pursuing fruitspotting bugs and fruit fly parasites, with some success. Michael Ross proceeded to Iron Range. We assume he made it!

Elaine Brough dropped into Mareeba briefly to talk IPM with entomology staff and to discuss an upcoming problem definition workshop on fruitspotting bugs.

Judy Grimshaw was well into the swing of the survey season. During March all but 6 days were spent in the field. Commencing with an extension/survey charter of coastal villages in the Western Province of PNG, returning through very rough seas on March 10, only to fly back to Thursday Island on the 17th for a survey of the northern islands of Torres Strait. Part of her work included plotting the distribution of the Asian Honey Bee, *Apis cerana*. The word is that they are having a wonderful time on Boigu Island and would just love it on Gabba Island, but they haven't reached there yet.

Judy's next survey commences on April 19 and includes 14 days in the eastern islands of Torres Strait talking to schools and people about quarantine issues in the far north.

Organising Committee,
AES Conference Cairns

By mid-April 166 registrations had been received for the July meeting. The committee is extremely pleased with the response and it augurs well for a successful gathering. One problem has been the overwhelming desire by registrants to present papers, and 120 titles have been received. This will necessitate some juggling of the scientific program which is likely to include running concurrent sessions on Tuesday 6 July.

Queensland Health - Cairns

David Sinclair obviously has his hands full at present with dengue outbreaks in Charters Towers and Townsville and general concern with the problem in the north.

Tropical Weeds Research Centre
Charters Towers

Marie Ablin has been pre-occupied with her wedding, which I guess was reason enough to get her Master's thesis out of the way.

Harry FAY
Regional Councillor

S.E. QUEENSLAND

QDPI Division of Plant Protection

Iain Kay (Bundaberg) was visited by Elaine Brough (Indooroopilly) in early February to inspect the district's IPM program. Elaine returned six weeks later to talk at an IPM field day. Neil Heather (Indooroopilly) also visited in March to talk about his vapour heat

disinfestation work to a mango-growers' meeting at Gin Gin. Nobody heard the talk as the meeting was in a tin shed and Neil's talk coincided with the only fall of heavy rain all summer. (Maybe farmers in the terribly drought affected areas of Queensland should arrange a meeting and invite Neil?). Iain himself visited Bowen in March to participate in a tomato IPM seminar and travelled on to Townsville to see Rhondda Jones.

Keith Halfpapp (Mareeba) and Rod Elder (Rockhampton) undertook a survey of palm pest problems from the Whitsundays (yes that's right) to Gladstone in late March. They report that they were particularly interested in cane weevil borer (*Rhabdoscelus obscurus*) and four-spotted coconut weevil borer (*Diocalandra frumenti*) distribution and host range. Both species were widely distributed with *R. obscurus* causing serious damage to palms in two National Parks. They found that both weevils had taken a liking to the resort life on some of the Whitsunday Islands.

Bureau of Sugar Experiment Stations

Peter Sampson (Bundaberg) visited New Zealand in February, ostensibly on sugarcane business. He reports that sugarcane was thin on the ground, but time was usefully spent attending the 6th Australasian Conference on Grassland Invertebrate Ecology and visiting soil insect laboratories at Hamilton and Lincoln.

Bernie FRANZMANN
Regional Councillor

Lands Department
Alan Fletcher Research Station

Rachel McFadyen has recently returned from a three week trip to Indonesia, Java and the Philippines, where she visited collaborating institutions involved in the ACIAR project for biological control of *Chromolaena*. This three year project commenced in January 1993, and represents Indonesia's first foray into weed biocontrol. The main problems to date revolve around obtaining visas for import of insects from Argentina.

Graham Donnelly visited Quilpie in far west Queensland during March to collect mesquite seed to feed bruchids for biocontrol. Graham witnessed some severe and widespread damage to mulga from hungry grasshoppers - competition for any fodder is severe in the drought.

Permission has been received to release the stem-galling weevil *Contrachelus* sp. on parthenium weed. Field releases will occur when large numbers have been reared, and parthenium in the field is suitable, currently the plants are in very poor condition due to the extreme drought. The rubber vine rust is presently being bred up, with the first field releases to occur soon.

Judy Melksham has resigned from the department and moved to Canberra.

CSIRO Long Pocket

The Biological Control of Weeds group has had a recent population explosion. Shaun Winterton has joined the group to work on a CRCTPM/CSIRO funded project investigating the effect of water nutrient levels on interactions between water hyacinth and its herbivores. Jenny Burcher, a UQ student, has completed her vacation scholarship but will continue on a part-time basis for a few more months. Anneke Meijer a student from Wageningen University, The Netherlands, is visiting the group for her practical experience. Sonya Keegan is a TAFE student who is working with the lab and glasshouse staff for 18 months on a Federal funded employment experience scheme. Linda Peady provided temporary assistance with the breeding of water hyacinth biological control agents but has recently moved on.

Other recent appointees are: Kim Sprott, who is employed for a three-year term as a research assistant by the Centre for Tropical Pest Management. She is working with Peter Room and Jim Hanan examining growth of plants and their responses to insect damage. This work will be the basis for extending and refining computer software to be used in research on strategies for biological control of weeds and insect pest management. Shama Khan is employed part-time as a research assistant by the Centre and is also working with Peter Room and Jim Hanan.

Wendy Forno visited the CSIRO and DPIF mimosa biological control groups in Darwin before meeting with Tony Wright to participate in a review of the ACIAR funded water hyacinth project in Thailand and Malaysia. The water hyacinth program is developing well and is in

distinct danger of becoming a bigger international program than salvinia. Mic Julien and Michael Day have been battling non-existent communication facilities and unavailable vehicles to get the PNG water hyacinth program underway. Things have improved since their trip to the Sepik in March.

The salvinia program in Kakadu has come up with some interesting results indicating that *Cyrtobagous salviniae* is, in fact, working quite well, but that damaged mats of the weed don't sink. An integrated management program is now envisaged to try to assist *Cyrtobagous* in producing reliable control.

The mimosa program is progressing well despite some earlier herbicide induced hiccoughs. The moth *Neurostrota gunniella* can now be found established in almost all areas of infestation. *Carmenta mimosa* has survived and is increasing well in the Finniss River region and *Apion aculeatum* has been bred from field material. Host testing of the fungus *Phloeospora* has been completed and it should be released this year pending approval from AQIS and ANPWS.

Ricardo Segura, our man in Mexico, will be arriving in Australia on 1 May 1993. This is the first time he has visited Australia. He has been instrumental in collecting and shipping agents for the weeds of American origin program and we are looking forward to his visit. Also on the move was Ryan Zonneveld who visited the Darwin CSIRO and DPIF weeds groups for experience and exchange of ideas on insect breeding for mass release.

Veronica Brancatini visited Kiribati (a Pacific Island nation, previously the Gilbert Islands) in March and April to set up a monitoring system for *Icerya aegyptica* and its natural enemies as part of a program on the biological control of this pest.

Queensland Institute of Medical Research

Brian Kay is currently visiting Nairobi for a PEEM steering committee meeting to assist with writing research proposals to fit within the strategies for urban development post the Earth Summit.

Lynda Muir has been awarded a WHO fellowship for 1993 to study overseas developments in sensory physiology and behavioral research on mosquitoes, as well as undertaking field trials of an *Aedes aegypti* lure. Lynda will attend the AMCA meeting at Fort Myers, Florida and a workshop on attractive semiochemicals at Vero Beach Florida, and will visit relevant research laboratories in Gainesville, Florida; Puerto Rico; California; and Fiji.

Griffith University

Stuart Bunn made an exciting discovery recently while 'paddling' in a small stream at Lamington National Park, S.E. Qld. Stuart uncovered numerous nymphs of the leaf shredding mayfly *Ephemerellina picta*. This species is in the Ephemerellidae, a family well represented in the holarctic, South America and South Africa, but previously known in Australia only from three adult females, one female subimago and a single nymph, all collected from Lamington National Park in 1942/43, and described by E.F. Riek in 1962. Stuart's discovery will allow the male to be described, as well as providing important ecological and distributional information.

The recent 32nd Annual Congress of the Australian Society for Limnology held at Marcoola, S.E. Qld was a great success, and included many papers of entomological interest, particularly in the areas of benthic ecology, population genetics, and biomonitoring.

University of Queensland

Professor Gordon Gordh arrived in early February to assume duties as Head of the Entomology Department. During the past year Myron Zalucki served as acting head. Gordon came to Brisbane from the University of California, Riverside where he worked in biological control and the taxonomy of parasitic Hymenoptera. He intends to continue working the systematics of Bethylidae and Encyrtidae. He also hopes to continue research in biological control, particularly with the development of artificial diets for egg parasites.

Myron is currently on study leave in the United States. He is presently at the University of Florida in Gainesville, where he is working on monarch butterflies with Lincoln Brower.

The department was notified that the Ph.D. dissertation of Surakrai Permkam was approved. His thesis title was "A Revision of the

Australian Trypetinae (Diptera: Tephritidae)" under the supervision of Hugh Paterson.

Graham Floater, Janice Green and Jenny Marohasy have commenced PhD studies within the department. Graham's studies will be on the population dynamics of insects associated with *Acacia concurrens* around Brisbane, under joint supervision of Roger Kitching (Griffith University) and Myron. Janice is investigating the ecological role of spiders in a citrus ecosystem, under the supervision of Gordon Gordh and Elaine Brough from the CTPM. Jenny is working on aspects of the biocontrol of *Lantana*. Mustapha Jallow has begun masters research on host selection and survival of early instars of *Helicoverpa armigera*.

Axel Bosselman and Martin Rice gave papers at the World Neem Conference, Bangalore, India, in March. Errol Hassan from the University's Gatton campus also attended. There were nearly 500 delegates at the conference, from 30 countries, with over 200 presentations. The proceedings are expected to exceed 1000 pages! Axel spoke on the suitability of sites in Queensland for growing neem. Martin spoke on the built-in resistance protection mechanism of azadirachtin. He also gave a 30 minute, invited, plenary session review of the use of neem in ectoparasite control. The conference souvenir had a long article by Martin on the development of neem research and industry in Australia. He was also asked to chair a session on entomology and pest management and was selected as a member of the expert panel, for the closing plenary session.

Congratulations to Chris Pavey who received a grant of $5000 from the Wet Tropics Management Agency for research on the feeding ecology and distribution of Horseshoe bats in Wet Tropics World Heritage areas.

Queensland Forestry Service

Ross Wylie is spending three months on the Philippine island of Luzon, where he is contributing to a Tree Improvement Project. In addition, he will examine insect problems on several islands including Mindanao and Mindoro. Ross reports his work has been made more exciting by dodging religious disagreements, "crusading" bands, polluted water, malaria, limited electrical supply, phone calls that seem to be coming via Jupiter, faxes that occasionally come through, etc. I guess one can always avoid polluted water by sticking to wine!

Centre for Tropical Pest Management

Robert Merlicek and Bruce Blackshaw, in the CTPM Decision Support/CAL research program, announced that they have successfully captured full motion video with true stereo sound, of CD quality, on an IBM PC running Windows 3.1. This video imaging has been integrated into "DIAGNOSIS" and now anyone can build their own pest scenarios and include video clips on their PC. This success was followed closely by John Turner (QDPI) and the CAL researchers completing their first training video entitled "Arthropods in Imports". This training video is initially aimed to assist Australian quarantine and export inspectors, with research and development funded by AQIS.

The Centre's first intensive course on biocontrol of tropical weeds is to be held in Brisbane in May. The two week course will give participants, primarily agricultural scientists from developing countries, a balanced understanding of the theory and practice of weed biocontrol. Interest in the course has been so high that a second course is planned for early 1994.

CTPM is planning to hold a 2 week training course on CLIMEX in October this year. The course is intended to take novices right through to becoming experts at using all CLIMEX functions. The course will involve lectures, demonstrations and a supervised project of the participants choosing.

Plans are underway for a 2 day Fruit Spotting Bug (FSB) workshop (8th and 9th July 1993) to be held immediately after the Australian Entomological Society Conference in Cairns. The workshop is aimed at identifying the most feasible options for improving pest management of FSB and related research, implementation and training needs for achieving this improvement.

CTPM also welcomes Dr Saroj Singh who is an AIDAB sponsored visitor. Dr Singh will study applications for modelling disease transmission.

Manon GRIFFITHS
Regional Councillor

SOUTH AUSTRALIA

Crop Protection Dept, Entomology Group University of Adelaide

Two students, doing the Masters Degree in Crop Protection, have started their research projects: Mr Sassan Asgari is working on an immunological comparison of symbiotic viruses in two closely related species of parasitic wasps, and Mr M. Sarjan is examining the susceptibility of calliphorid flies, other than *Lucilia cuprina*, to *Bacillus thuringiensis* toxin.

Andy Austin has recently returned from study leave. He spent most of December and January with Ian Naumann at ANIC, working on revisions of two groups of braconid wasps, and doing field work in eastern Australia. Dr Marianne Hellers arrived in the Department during March to take up a University-funded Postdoctoral Fellowship with Otto Schmidt and Andy Austin. Marianne will be working on the role of polydnaviruses in parasitic wasps and how they block the host's immune response.

Dr David Gordon, who has been working in the Department as a postdoctoral microbial ecologist and who has general interests in insect ecology, has recently accepted a lectureship in Botany and Zoology at ANU. In Mike Keller's laboratory, postgraduate students come and go! Mr Bijan Hatami has joined the insect behaviour group to work on the impact of parasitoids on *Plutella*, while Frances FitzGibbon and Daryl Hardy have recently submitted their Ph.D. theses. Frances was working on the interactions of woolly apple aphid in orchard systems, and Daryl on resistance to pea weevil in *Pison* spp.

Dept of Primary Industries

On Wednesday 10th March, Adelaide leaped into the 20th Century with an initial release of 1 million sterile *Bactrocera tryoni* as a result of the detection of fruit fly larvae in a suburban backyard. Members with long memories will recognise this as an historic event. Over 30 years ago, this "new" technique was tried in isolated towns in western NSW as models for "island" outbreaks that occur in Adelaide. The late Professor Andrewartha, Allan Bateman, John Monroe, the late Noel Richardson, Andrew Osborn and Peter Bailey, amongst others, participated in this work. Cautious to a fault, Adelaide folk seem to have finally accepted that sterile males are not likely to molest the womenfolk, frighten the horses or fade the curtains!

Dennis Hopkins attended the 6th Australasian Conference on Grassland Invertebrate Ecology, held in Hamilton, New Zealand in February. Dennis presented a paper on the impact of sitona weevil on nitrogen fixation in annual medics and presented a poster on annual medic pests on behalf of Peter Taverner.

Some construction work on facilities that will eventually house Department research staff has commenced at the Waite Campus of the University of Adelaide. It is hoped that the whole relocation process will be completed by mid 1994 and this will see DPI entomologists co-located with Waite entomologists by this date.

Private Entomology Sector

James De Barro is coming to the end of the lucerne season. Crops are generally average and James is waiting to determine the damage caused by seed wasp, *Bruchophagus roddi*, which has been extremely abundant this season. Crop Monitoring Services opened its new premises in Keith (29 Elm Ave) at the end of March, the grand opening being attended by 100 guests. The new premises will enable increased expansion of the crop protection and management services offered by CMS.

Citrus leafminer has invaded the Riverland in the last 2 months. We are already receiving shipments of their natural enemies from Dan Smith, QDPI, Nambour, who is making frequent field collections under sponsorship from CBSA and HRDC. To date, no establishment has been noted, but *Agemiaspis* sp. has been observed actively ovipositing in leafminer larvae in the last few days.

Citrophilus mealybug continues to be a major pest in Riverland citrus but releases of *Tetracnemoidea brevicornis* over the last few years have been successful in establishing this valuable parasite. They can now be found in every orchard and in some areas give up to 40% parasitism of each generation. Unfortunately, a hyperparasite *Chartocerus* sp. finds *T. brevicornis* quite delicious and reduces their effectiveness, particularly in autumn. Natural control, however, is much better than 4

or 5 years ago. More research is needed to increase the level of biological control of this pest and investigate the relationship between mealybugs and halodamage. If this is not done, increased organophosphate usage will certainly result as growers are being pushed by consumers and packing houses for increased cleanliness and blemish-free fruit. This would be a backward step indeed.

CSIRO Entomology and Soils

Geoff Baker and John Budenfield were in New Zealand for the recent International Grassland Congress and, after that, the Australasian Grasslands Invertebrate Ecology Conference. They presented papers and posters on their earthworm research. John stayed on in N.Z. for a further 3 weeks during which he visited a number of earthworm researchers in the North and South Islands. Geoff was in Canberra recently to give another talk and to catch up with various staff in CSIRO Entomology.

Vicki Bennett has left for maternity leave - so we wish her the very best. Trudy Thumlert has also left, in her case for Denmark where she is on a rural exchange fellowship, working on a mixed farm south of Copenhagen for a year. Trudy was employed on the Double Helix Club "Earthworms Down Under" project and identified all the earthworm specimens sent in to the national survey (>1400 sites). Trudy and Penny Carter have mapped the distributions of the many species that were found and thus have given much insight into the geographic limitations of our earthworm fauna.

Recent good news is the approval of a three year grant from Land and Water Resources RDC to work on the role of earthworms in burying lime and offsetting soil acidity. Entomology staff will provide biological input to the existing LWRRDC soil acidity program which already has soil chemists and pedologists from Victoria, South Australia, Western Australia and Queensland.

Snails have been very much in the news with the worst year by far for farmers harvesting grain and confronted with snail contamination. The bad year reflects, in part, a general increase in snail numbers in response to changes in agricultural management (one of the downsides of sustainable agriculture - less burning of pastures and stubbles prior to saving crops and less tillage gives more snails). The bad year is also a response to the exceptional weather of 1992, a dry mid-winter and prolonged rain in spring-early summer. This was ideal for snail recruitment and dispersal into crops.

University of South Australia

We were sad to see Phil Weinstein, formerly of the SA Health Commission, move away to Townsville. Our loss is their gain. He provided a valuable link for us with the world of epidemiology. Speaking of which, we are observing the current outbreak of Ross River Virus infection in South Australia with ghoulish interest. Mike Kokkinn currently works on a major vector of the disease, *Culex annulirostris*, a savage diurnal biter.

Lawrie Bennett has turned his attention back to mosquito matters and has become interested in chromosomes and things genetic. Grant Fleming has been experimenting with methods of marking "live" mosquito larvae so that he can use them in experiments with *Mesostoma* predators. Alan Mead has now officially retired and has been seen unpacking boxes in the laboratory. Construction of the low velocity wind tunnel by Mike Kokkinn and "clever country" Fred Stace is making good, but expensive, progress ($3500 for a high quality air filter!). We may end up with half a wind tunnel and no more money, in which case the construction will be entered for the Archibald Prize as a portrait of mosquito research in 1993.

A turn of events in the very secret project has Mike Kokkinn and collaborators puzzled. Will there ever be a story to be told from this work?

Andy AUSTIN
Regional Councillor

TASMANIA

Department of Primary Industries and Fisheries, New Town

The Bumble Bee, *Bombus terrestris*, first found in a Battery Point (Hobart) garden in February 1992, has now established itself in the Hobart area. Confirmed sightings in 1993 include the nearby suburbs of Sandy Bay, West

and South Hobart, the city area and the outlying areas of Glenorchy, Lindisfarne and Collinsvale.

It is not known how it was introduced. The origin is probably New Zealand.

Tim KINGSTON
Regional Councillor

VICTORIA

CSIRO Division of Forest Products

In February, John French (DFP) and Mike Lenz and Leigh Miller (Div. Entomology, Canberra) visited Thailand on an ACIAR-funded trip in order to arrange a collaborative termite research project with Dr Chharunee Vongkaluang of the Royal Forest Department in Bangkok. The intent of the visit was to evaluate the possible impact subterranean termites were having on agroforestry systems and on timbers in rural and urban dwellings in Thailand. They also visited Ratchaburi (100 km west of Bangkok) and observed considerable termite damage in sugar cane crops. The practice of spraying 1% chlordane on the young cane shoots is continuing; this treatment is expected to prevent termite and cane borer damage for up to three years, after which period the spraying regime is repeated. Obviously this is a good area to augment termite and borer bait systems!

While in the district, the group viewed the Bridge on the River Kwai and stayed overnight at the Soi Yok National Park, in Forest Department bungalows set in a 30-year-old teak plantation. Termites (*Odontotermes* spp.) were plentiful up the tree stems, but appeared not to affect tree growth. *Macrotermes* spp. were also common at this location. Fortunately it was the dry season and mosquitoes were few and far between. Inspection of eucalypt (river red gum) plantations revealed that only trees under stress were attacked and damaged by termites; healthy young seedlings and trees appeared termite-free.

In May, John French, Jim Creffield and Kevin McCarthy will be attending the Annual Meeting of the International Research Group on Wood Preservation at Orlando, Florida and presenting papers on their current termite research. En route to the meeting, John and Jim will be visiting termitologists in Hawaii and on the mainland. Hopefully, the Florida hurricanes will not be a problem! After the meeting, John will travel to San Francisco to visit Mike Haverty (USDA Forest Service) and also to the University of California, Berkeley to meet with Dave Wood and Vernard Lewis (Dept. of Entomology). Jim intends to visit the USDA Forest Service's Gulfport facilities, as well as colleagues in Baton Rouge, Houston and California.

During March, two TAFE students, involved with the TAFE-CSIRO traineeship scheme, were "attracted" to the Division of Forest Products. The students, Kelly Pham and Hilary Littlewood, are working in the microbiology and entomology groups, respectively. It's great to see young people in the lab. again! There should be more of it.

Department of Agriculture
Institute of Plant Sciences, Burnley

Please note that, due to circumstances detailed elsewhere in this issue (see page 6), the Institute of Plant Sciences has been transfered and transformed into the Institute for Horticultural Development. However, until further notice, contacts for Burnley entomologists will remain unchanged.

Garry McDonald attended the International Grasslands Congress and the VI Australasian Conference on Grassland Invertebrate Ecology in New Zealand during February. He reports that both meetings were most stimulating, although the ACGIE was of a particularly high standard, despite a noticeably small representation of Australian grassland entomologists.

DeAnn Glenn has just commenced her PhD project on *Trichogramma* and its use as an egg parasitoid of *Helicoverpa* and is working from IPS/IHD, Burnley under the supervision of Garry and Ary Hoffmann (Dept. of Genetics, LaTrobe University). Congratulations are due to DeAnn, who has just received the David Myer award for the most outstanding Honours project in the School of Biological Sciences at LaTrobe for her work on insecticide resistance in *Helicoverpa armigera*. As an appropriate follow-up, she has also been awarded the Priority APRA Commonwealth Scholarship to support her PhD.

During March, a number of Burnley entomologists were involved in observing

Australian Plague Locust Commission techniques for ground surveying of plague locusts in northern Victoria and southern NSW. This exercise was co-ordinated by Malcolm Campbell of the Sunraysia Horticultural Centre, Irymple. A substantial number of locust eggs have been laid in the Mallee region of Victoria and high numbers of adults are expected in the spring. Peter Ridland and Mark Smith worked with Libby Bie in the Jerilderie area; John Osmelak accompanied David Hunter around Broken Hill; and Gordon Berg and Peter Williams operated in the Ivanhoe region. The exercise was quite successful, although Mark Smith complained that he didn't get to fly in as good a helicopter as did John Osmelak! Some people are just never satisfied.

Andrew HENDERSON
Regional Councillor

WESTERN AUSTRALIA

WA Museum

Termites and butterflies have supplanted the native bees as Terry Houston's main focus, at least temporarily. The Museum hopes to exhibit a large termitarium with a cutaway section to expose the interior architecture in an education display later this year and Terry visited Derby in March to reconnoitre and select a suitable specimen. The species concerned is Nasutitermes triodae which, in north-western Australia, produces mounds with a characteristic 'dollopy' appearance. A 2.5m high mound of this species is estimated to weigh 4-6 tonnes and to move one over a distance of about 1800 km presents quite a challenge. The project has attracted substantial sponsorship offers already but a few hurdles remain to be overcome before success is assured. Retrieval of the termitarium is scheduled for June. Sponsorship is also sought to enable the construction of a permanent gallery of butterflies at the WA Museum. Meanwhile, work continues on a guide to butterfly gardening for Western Australians in collaboration with members of the W.A. Insect Study Society.

Paul Brock of Slough, England, paid a brief visit to the Museum in late March to view the phasmid collection and Mauro Daccordi and Walter Borsato of the Natural History Museum in Verona visited the Entomology Section on April 14 to examine the chrysomeline beetle and eumenine wasp collections, respectively.

Agriculture Protection Board

Peter Davis and John van Schagen visited Derby for the last time to wind up their bait studies on Singapore ants. A couple of the fire-ant baits look very promising as potential control methods for this pest ant. In Perth, similar trials are underway to test these baits on coastal brown ants, which are a problem in many coastal areas in Australia. If the same baits are effective against these ants, it should provide a good basis for their registration in Australia. The same baits have proven ineffective against the Argentine ant, because of it's different food preference, but after incorporating the active constituent in a more suitable bait formulation it gave some very positive results. Large scale field trials are planned for spring this year.

This is the last time I'll be reporting for Myrmecia as Regional Councillor. I'd like to thank all those people who have sent in their contributions over the last three years and I hope they will continue to do so. I wish the next Regional Councillor the best of luck and I hope he or she will be able to put more time into it than I have been able to.

John VAN SCHAGEN
Regional Councillor

OVERSEAS NEWS

New Zealand

Wasps in Auckland are increasing again after low populations last year but have not reached the high levels of 1991. This year is the first that we have been collecting information on large overwintering German wasp nests in the Auckland area. About 20 nests have been collected so far from northwestern Auckland and have ranged in size from 40-150 kg in weight. A 40 kg nest has an estimated 200,000 larval cells. A survey of general practitioners and accident and emergency clinics in the Auckland area has revealed that approximately 800 people sought treatment for wasp stings in 1991/92. Half of these stings have been inflicted by paper wasps, *Polistes* spp. and half by European wasps, *Vespula* spp. This survey is

continuing this year and giving similar results.

This information was supplied by Auckland Entomologist Jenny Dymock. "Because I live in a small town at the other end of the Island (Featherston), and am recognised as the local entomologist, I am expected to dispose of wasp nests too - this year I have only been called in three times instead of the usual 20 or 30!

John TENQUIST
New Zealand Correspondent

Papua New Guinea

The publications from the Department of Agriculture and Livestock (DAL) are now beginning to come out regularly. Volume 36 No.1 of PNG Journal of Agriculture is just out. Its contents are as follows:

1. Banana Production by Kubo People of the Interior Lowlands of Papua New Guinea - *Peter D. Dwyer & Monica Minnegal*, 1-21
2. Effects of Applications of Mulch and Potassium on Capsicum - *D.E. Gollifer*, 22-29
3. Wood Breakdown in Mangrove Ecosystem: A Review - *S.M. Cragg*, 30-39
4. Analysis of Copper and its Status in Cattle from Morobe Province, Papua New Guinea - *Ian I. Onaga, Malcolm Carrick & Chris Owens*, 40-53
5. Fertilizer Trials with Turmeric (*Curcuma domestica* Val.) at Santa Cruz, Solomon Islands - *D.E. Gollifer*, 54-59
6. Aibika (*Abelmoschus manihot*) Germplasm in Papua New Guinea - *John W. Sowei & Pauli Osilis*, 60-69
7. The Use of Chlorpyrifos in Controlling Weevil Borer, *Rhabdoscelus obscurus* Biosd. (Coleoptera, Curculionidae) in Sugarcane Setts. - *L.S. Kuniata & G.R. Young*, 70-75
8. Preserving Chicken Eggs Internal Quality using Coconut Oil - *Masaya Moat*, 76-78
9. Nutritive Value of Sweet Potato Forage (*Ipomoea batatas* (L.) Lam.) as a Ruminant Animal Feed - *M. Moat & G.McL. Dryden*, 79-85
10. Soil and Cultivation in the Papua New Guinea Highlands: 1. Indigenous Appraisal of the Variable Agricultural Potential of Soils - *Paul Sillitoe*, 86-94
11. Urbanization and the Urban Poor - Vanuatu's Food Security Challenge - *Tim Foy*, 95-104
12. Instructions for Contributors, 105-107

An inspection copy of the above journal is available free of charge from the undersigned (see address on back cover). The DAL Newsletter, Didimag, is also being published every month. The Extension Journal Harvest is expected to be published in June 1993.

Mr Warea Orapa recently joined the Agricultural Protection Division as an Entomologist. He holds a B.Sc. degree from UPNG and replaces the late Malchus Arura. Two positions for Entomologists Class 3 and Class 4 are still vacant.

Ray KUMAR
PNG Correspondent

NEWS FROM AFFILIATED SOCIETIES

Entomological Society of Queensland

1993 is the Society's 70th year, and a series of special meetings will mark the Anniversary.

At the Annual General Meeting in March, **Richard Drew** was elected President and **Lindsay Barton Browne**, Senior Vice President.

Graham White's thought provoking Presidential address, entitled "Is There Room For Science in Entomology?" led to some very interesting discussions over supper.

A large audience attended the April meeting. The guest speaker was **Paul Ferrar** and his topic "Prospects for Research in Pest Management in the Australian Region." He discussed ACIAR projects and funding, the philosophy behind the program and the type of research supported.

Christine Neale has resigned as Representative Councillor for the Society and we thank her for her work.

Judy KING
A/Regional Councillor

Entomological Society of New South Wales Inc.

The Entomological Society of NSW extends its congratulations to the Entomological Society of Queensland on reaching 70. 1993 is also a significant year for the Entomological Society of NSW which marked 40 years of existence with a special Annual General Meeting in March.

All previous Presidents of the Society still living were invited to attend and present a short talk on a topic of their choosing. Of the nine former Presidents, **Keith Salter** (1961-62) is unfortunately no longer with us, **Jenny Anderson** (1980-81) and **John Macdonald** (1988-90) were "out bush" and **Clarrie Chadwick** (1953-60, 1963-78) was unavailable.

Graham Brown (1991-92) presented a short history of the early days of the Society, much of which was extracted from a publication by Clarrie Chadwick, the founding President of the Society. **Alan Clift** (1979, 1993) then presented his views on the traumatic 1978-79 period which saw many changes in the Society. **Courtenay Smithers** (1982-83) talked on "Science, Conscience and Conservation" in which he urged members to be involved in public issues in which entomology is relevant, to ensure that decision-making is based on accurate information. He concluded his talk with the statement "..as in all things, science must have a conscience. Conservation must have a science. As scientists, I believe we have no choice but to be vocal." **Max Moulds** (1984-85) gave some thoughts on the Society's Journal, *General and Applied Entomology*, under the headings "Journals must fulfil the needs of members", "Journals must fulfil the needs of institutional subscribers" and "Journals must fulfil the needs of science". Max expressed his belief that the journal must maintain a balance between applied and general entomological topics to ensure continuing support by the membership of the Society and by subscribers. He also gave an indication of the directions he thought journals such as ours would need to go to maintain their relevance in a changing scientific world. **Murray Fletcher** (1986-87) spoke on "The Commercialisation of Science" in which he outlined the various client groups using taxonomic services provided by NSW Agriculture and likely impacts on these groups if this service were commercialised. He

Entomological Society of NSW 40th AGM - former Presidents cutting the cake: from left, Graham Brown, Murray Fletcher, Courtenay Smithers, Max Moulds, Alan Clift.

concluded by stressing the underlying taxonomic basis for all types of biological research, including understanding and conserving the diversity of life, preserving natural environments and restoring damaged habitats, searching for new approaches for dealing with old problems, protecting our primary industries from exotic organisms, providing biological information for ecologically sustainable development and using new technologies, particularly in the information management arena, to keep ahead of the world's pests.

The meeting ended with a birthday cake (see photo) and a champagne supper. Summaries of the talks have been published in the *Circular of the Entomological Society of NSW* **427**: 3-8.

The elections for Council were also held at the AGM. **Alan Clift** became the new President with Graham Brown his Vice. Other members elected were Alison Nicholls (Secretary), Ted Taylor (Treasurer), Mary Ann Terras (Public Officer and Business Manager), Dan Bickel (Journal Editor), Alan Westcott (Circular Editor), Steve Fellenburg, Murray Fletcher, Peter Gillespie, Barbara May and Robert Spooner-Hart.

Other meetings held during the last quarter included the February and April meetings. The first featured **Richard Kingsford** of the NSW National Parks and Wildlife Service who detailed his research, primarily on birdlife but mentioning insects as they affected the birds, on two lakes in Southwest Queensland. Lake Wyara is a salt lake and Lake Numalla is freshwater and the two, which now form the primary part of Currawinya National Park provide fascinating contrasts in birdlife, vegetation and aquatic entomology.

The April meeting was addressed by **Florence Fouque**, who has been working with Richard Russell at Westmead Hospital prior to taking up a new appointment as entomologist with the malaria project of l'Institut Pasteur in French Guyana. Her topic was "Mosquito populations of picturesque Switzerland".

Murray FLETCHER
Ent. Soc. NSW

COMING EVENTS

AES Conference Reminder

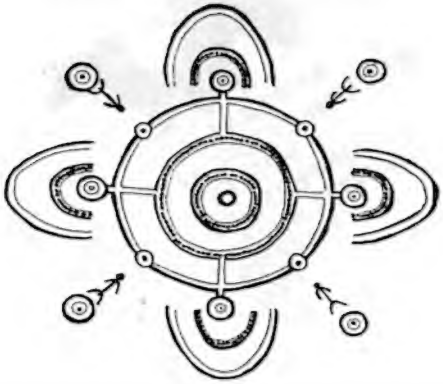
Those of you who haven't registered for the Cairns conference but are still interested in attending should contact Ross Storey or Harry Fay on (070) 921555 or Keith Chandler on (070) 561255. No more papers can be accepted nor accommodation arranged for late registrants. However, the organising committee will provide advice on obtaining suitable accommodation.

For late registrants the following fees are applicable:

Full attendance	
AES member (& affiliates)	$120.00
Student member	$100.00
Non member	$140.00
Day attendance	$ 30.00

Ecological Society of Australia

1993 Open Forum and Symposium Conference



The 18th AGM and scientific meeting of the Ecological Society of Australia (ESA) will be held at the Australian National University from Sunday, September 26th to Friday October 1st, 1993. All members of ESA and interested non-members are cordially invited to attend. The meeting will consist of four days of scientific sessions and a mid-week excursion to national institutions in Canberra of relevance to ecologists. The scientific program will comprise a mix of special interest Symposium Sessions and non-structured Open Forum Sessions.

Further details and registration forms are available from:

ESA Conference Secretary
c/- Craig James
CSIRO Wildlife & Ecology
PO Box 84
LYNEHAM ACT 2602

Phone: (06) 242 1600
Fax: (06) 241 4020
Email: CraigJ@cbr.dwe.csiro.au.

REGISTRATION CLOSES 31 JULY 1993

ANIC Technical Training Course

Given the overwhelming success of the first ANIC technical training course (see *Myrmecia* **28**(4): 17-19) the ANIC has offered to conduct further training courses at regular intervals. The next course will be held from 20-24 September 1993 incl. The course is designed to provide technical training for entomological technicians working with research collections of insects and related organisms or specimens for taxonomic study and identification and will cover all aspects of entomological techniques including collecting specimens, pinning, preparation, labelling, storing and curation. The course, organised by the ANIC Collection Manager, Dr Geoff Clarke and Mr Murray Upton, will draw upon the expertise of ANIC staff for teaching and demonstration.

The course, limited to 15 participants, will cost $250.00 per person plus accommodation.

All interested persons should contact Geoff Clarke (**Phone**: 06-2464036, **Fax**: 06-2464000) no later than 30 June 1993 to register. Moderately priced accommodation can be arranged at the participant's request.

RECENT PUBLICATIONS

Mosquitoes and Mosquito-borne Disease in Southeastern Australia

by Richard Russell, University of Sydney at Westmead Hospital.

A new **Revised Edition** (1993) of this manual has just been published. The original (1990) version has been completely reviewed and updated after consultation with mosquito workers throughout Australia. The identification keys have been amended and improved following extensive use and the detailed illustrations have been retouched and further enhanced to simplify identification of field collected adults and larvae.

This easy to use, practical guide to the biology, relation to disease, surveillance, control and identification of mosquitoes of NSW, Victoria, Tasmania and South Australia has been prepared primarily for environmental health officers and health surveyors and will also be a valuable reference for other professionals dealing with mosquitoes.

Limited numbers of this important publication are available at $45.00 per copy from:

Dr Richard C. Russell
Department of Medical Entomology
Westmead Hospital
WESTMEAD NSW 2145

Please make cheques payable to "The University of Sydney".

MARKET PLACE

FOR SALE

BACK ISSUES
Journal of the Australian Entomol. Society

Limited numbers of back issues of *J. Aust. ent. Soc.* are available for sale to members, subscribers and libraries at reduced rates for a limited period. Prices for individual issues are listed in the table on the next page.

Price for complete set (Volumes 1-31; 1962-1992) is $300.00. Availability depends on previous sales of individual issues and volumes.

Orders can be placed with:

Dr Geoff Clarke,
Business Manager AES
c/- CSIRO Division of Entomology
GPO Box 1700
CANBERRA ACT 2601.

Phone (06) 246 4036
Fax (06) 246 4000.

JOURNAL OF THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

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13	1974	4	2.50	10.00
14	1975	4	4.50	10.00
15	1976	4	4.50	10.00
16	1977	4	5.00	10.00
17	1978	4	5.00	10.00
18	1979	4	5.00	10.00
19	1980	4	5.00	10.00
20	1981	4	5.00	10.00
21	1982	4	7.50	15.00
22	1983	4	7.50	15.00
23	1984	4	7.50	15.00
24	1985	4	7.50	15.00
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29	1990	4	10.00	25.00
30	1991	4	10.00	25.00
31	1992	4	15.00	30.00

* Volume 25 No 4 is unavailable.

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